

S-100A10 siRNA (h): sc-44084

BACKGROUND

The S-100 family of calcium-activated proteins interact with a range of target proteins to modulate biological signaling pathways. Numerous cancer cell lines overexpress the plasminogen receptor S-100A10 on the extracellular cell surface, where it forms a heterotetrameric complex with Annexin II, though this association is not required for plasma membrane localization or binding and activation of plasminogen. Additionally, S-100A10 acts as a cellular chaperone for hepatitis B (Hep B) virus polymerase. Hep B virus polymerase normally localizes to the cytoplasm only, though in the presence of S-100A10 a portion relocates to the nucleus, implying a role for S-100A10 and intracellular calcium in the process of viral replication.

REFERENCES

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2. Ruse, M., et al. 2001. S-100A7, S-100A10, and S-100A11 are transglutaminase substrates. *Biochemistry* 40: 3167-3173.
3. El-Rifai, W., et al. 2002. Gastric cancers overexpress S-100A calcium-binding proteins. *Cancer Res.* 62: 6823-6826.
4. Broome, A.M., et al. 2003. S-100 protein subcellular localization during epidermal differentiation and psoriasis. *J. Histochem. Cytochem.* 51: 675-685.
5. Choi, J., et al. 2003. Association of hepatitis B virus polymerase with promyelocytic leukemia nuclear bodies mediated by the S-100 family protein p11. *Biochem. Biophys. Res. Commun.* 305: 1049-1056.
6. Daub, B., et al. 2003. Expression of members of the S-100 Ca^{2+} -binding protein family in guinea-pig smooth muscle. *Cell Calcium* 33: 1-10.
7. Eckert, R.L., et al. 2004. S-100 proteins in the epidermis. *J. Invest. Dermatol.* 123: 23-33.
8. Zhang, L., et al. 2004. RNA interference-mediated silencing of the S-100A10 gene attenuates plasmin generation and invasiveness of COLO 222 colorectal cancer cells. *J. Biol. Chem.* 279: 2053-2062.

CHROMOSOMAL LOCATION

Genetic locus: S100A10 (human) mapping to 1q21.3.

PRODUCT

S-100A10 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see S-100A10 shRNA Plasmid (h): sc-44084-SH and S-100A10 shRNA (h) Lentiviral Particles: sc-44084-V as alternate gene silencing products.

For independent verification of S-100A10 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44084A, sc-44084B and sc-44084C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20°C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20°C , avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μl of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μl of RNase-free water makes a 10 μM solution in a 10 μM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

S-100A10 siRNA (h) is recommended for the inhibition of S-100A10 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μM in 66 μl . Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

S-100A10 (4E7E10): sc-81153 is recommended as a control antibody for monitoring of S-100A10 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor S-100A10 gene expression knockdown using RT-PCR Primer: S-100A10 (h)-PR: sc-44084-PR (20 μl , 482 bp). Annealing temperature for the primers should be $55-60^{\circ}\text{C}$ and the extension temperature should be $68-72^{\circ}\text{C}$.

SELECT PRODUCT CITATIONS

1. Shang, J., et al. 2013. S100A10 as a novel biomarker in colorectal cancer. *Tumour Biol.* 34: 3785-3790.

RESEARCH USE

For research use only, not for use in diagnostic procedures.